

STUDIES ON THE AUSTRALASIAN ASCLEPIADACEAE, III*
A NEW SPECIES OF *CYNANCHUM* L.
AND A NEW NAME IN *MARSDENIA* R. BR.

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Summary

Cynanchum brachystelmoides P. Forster, a new species from northern Australia and southern Papua New Guinea, is described and figured. The name *Marsdenia suberosa* S.T. Blake, a later homonym of *M. suberosa* (Fourn.) Malme, is replaced by *M. Lloydii* P. Forster and an amplified description is given together with illustrations. Notes on habitat, distribution and conservation status of both taxa are given.

Revisions of the genera *Cynanchum* L. and *Marsdenia* R. Br. in the Australasian region (defined as mainland Australia, the western Pacific Island groups and Papua New Guinea) are being undertaken by the senior author. Prior to their completion it is felt opportune to provide names for several taxa that are either undescribed or require a change of specific epithet.

***CYNANCHUM* L.**

During a revision of *Brachystelma* Sims (Asclepiadaceae) (syn. *Microstemma* R. Br.) in Australia (Forster in press), several specimens that were not referable to *Brachystelma*, and that had been placed in *Microstemma* folders at BRI and DNA, were examined. A closer study of these collections revealed a floral structure quite dissimilar to *Brachystelma* in that the pollinia are pendulous and attached to the base of the translator. These pollinaria do not appear to differ significantly in form and placement from those of taxa placed in *Cynanchum* L. and S.T. Blake commented in an unsigned note on Brass 8396 that the specimen keyed to this genus using Engler & Prantl (Schumann 1897).

The circumscription of *Cynanchum* is open to some debate, but the present trend appears to be the recognition of a broadly defined genus with several infrageneric divisions (Woodson 1941, Descouings 1961, Sundell 1981). Pollinaria form is quite variable within *Cynanchum sens. lat.* (Schill & Jäkel 1978) although the basic arrangement of components remains much the same. The form of the gynostegium and the insertion of the corona near the fusion of the corolla and androecium, together with the form of the pollinaria indicate that this material would be best accommodated within *Cynanchum* section *Vincetoxicum* (Wolf) Tsiang & Li.

***Cynanchum brachystelmoides* P. Forster sp. nov.**

Herbacea perennis. Radices tenuiter fusiformes usque 40 mm longae. Caules usque ad 35 cm longi, 0.5-4 mm diametro, erecti, nodis usque ad 10, 3-5 ramis, internodis usque ad 5 cm longis. Folia linearia, acuminata, coriacea glabra, 5-20 mm longa, 0.25 mm lata. Inflorescentiae 4-7 florum subsessiles cymae in summis 1-6 nodis inter petiolos foliorum binatorum; pedicelli 1.5-2.5 mm longi, filiformes penduli per anthesin. Calyx sine glande basali, 5-partitus, segmentis late triangularibus, 1-1.25 mm longis, 0.1-0.2 mm latis, glabris. Corolla profunde 5-partita, segmentis valvatis in alabastro ovati-oblongis, 1.5-1.7 mm longis, basi ca 0.4 mm latis, apice ovato, apice ovatiobtusata, 0.75 mm longa, basi ca 0.4 mm lata. Stamina in ca 0.3 mm longa parte superna columnae staminalis 0.75 mm longae inserta, connectivis incurvis, membrana apicali ovata, apice acuto. Pollinium solitarium in quoque cellula antherae, pendulum, oblongi-ovoideum ca 100 µm longum, 25 µm latum. Caudicula flavida ca 15 µm longa. Apparatus translatus brunneus ca 100 µm longus. Stigma conicum. Folliculi seminae non visa. **Typus:** Clarkson 4053 (holo: BRI; iso: CANB,K,L,MO,NSW,NT,PERTH,QRS).

*Continued from Austrobaileya 2(4): 401-404 (1987)



Fig. 1. *Cynanchum brachystelmoides*: A. habit $\times 0.5$. *Marsdenia lloydii*. B. leaf with truncate base $\times 0.5$. C. leaf with cordate base $\times 0.5$. D. habit of flowering twig $\times 0.5$. A Clarkson 4053; B,D Forster 2750. C. Bird AQ451406.

Herbaceous perennial. Roots thinly fusiform to 40 mm long. Stems to 35 cm long, 0.5–4.0 mm thick, upright, 3–5 branches, up to 10 nodes; internode length variable to 5 cm. Leaves linear, firmly coriaceous, glabrous; 5–20 mm long, 0.25–1.0 mm wide. Flowers borne on top 1–6 nodes, between petioles of leaf pairs, in 4–7-flowered subsessile cymes. Flower pedicels 1.5–2.5 mm long, filiform, pendulous during anthesis. Calyx without basal glands, 5-parted, segments broadly triangular, acute, 1–1.25 mm long, 0.10–0.20 mm wide, glabrous. Corolla deeply 5-parted; segments valvate in bud, ovate-oblong, 1.5–1.7 mm long, *ca* 0.4 mm wide at base, glabrous, white, brown or pink. Corona petaloid, broadly ovate, tip ovate-obtuse; 0.75 mm long, 0.37 mm wide at base. Stamens inserted on upper *ca* 0.3 mm of staminal column, 0.75 mm long; connectives incurved, apical membrane ovate, tip acute. Pollinium solitary in each anther-cell, pendulous, oblong-ovoid, *ca* 100 μ m long, 25 μ m wide. Caudicle yellowish *ca* 15 μ m long. Translator brown, *ca* 100 μ m long. Stigma conical. Follicles and seed not seen. **Figs 1 & 2.**

Specimens examined: Papua New Guinea. Tarara, Wassi Kussa River, Western Division, Dec 1936, Brass 8396 (BRI). Australia. Northern Territory. DARWIN AND GULF DISTRICT: 14 miles [22.4 km] from Darwin on Stuart Hwy, Dec 1970, Morgan 15 (DNA); near Q215, *ca* 26 miles [41.6 km] NNE of Oenpelli Mission, Feb 1973, Lazarides 7728 (BRI). Queensland. COOK DISTRICT: Cooktown, Feb 1945, Flecker 9106 (BRI); ditto, Feb 1945, Flecker 9107 (BRI); 5 km W of the Watson River crossing on the Aurukun–Merluna road, *ca* 40 km NE of Aurukun, Dec 1981, Clarkson 4053 (BRI, CANB, K, L, MO, NSW, PERTH, QRS). **Map 1.**

Habitat: *C. brachystelmoides* has been recorded from low lying areas, such as swamps or flats — “common on fringe and bed of *Melaleuca* lagoon in black alluvial soil with *Erythrophleum chlorostachys*, *Eucalyptus polycarpa*, mixed herbs, shrubs and vines.” (Lazarides 7728) and “Undulating to low hilly area with *Eucalyptus tetrodonta*–*E. dichromophloia* open forest.” (Clarkson 4053).

Notes and Observations: Of the herbarium specimens studied, Brass 8396 and Clarkson 4053 possess rootstocks and these appear to consist of several fusiform roots similar to certain species of *Brachystelma* and *Ceropegia* L. Superficially the plants do resemble *Brachystelma microstemma* Schltr. (hence the specific epithet) as the leaves are small and scale-like and the flowers arranged similarly at the nodes. The plants are said to be “erect, dark-green, sparsely leaved” (cf. Lazarides 7728) and are therefore similar vegetatively to species of *Brachystelma*.

A little size variation in some floral characters is evident between Clarkson 4053 and Brass 8396. These are corona segment length, staminal column width and anther wing diameter (Fig. 2). Flower colour is apparently variable with white (Lazarides 7728, Flecker 9106, Clarkson 4053), brown (Flecker 9107) or pink (Brass 8396) recorded.

The collection of good flowering material in spirit would facilitate the taxonomic study of this plant which appears to be most closely allied to other fusiform rooted taxa within the section *Vincetoxicum* such as *C. riparium* Tsiang & Zhang and *C. hydrophilum* Tsiang & Zhang (Tsiang & Li 1974).

Conservation status: The distribution (Map 1) of *C. brachystelmoides* seems to parallel that of *Brachystelma microstemma*, with both species being collected either together or in close proximity in the same vegetation association. While both species are inconspicuous, *C. brachystelmoides* is perhaps more so, hence the paucity of collections. Using the coding system of Leigh *et al.* (1981) a conservation coding of 3K is allocated to *C. brachystelmoides*.

MARSDENIA R. Br.

When Blake (1948) described the new species *Marsdenia suberosa*, he was obviously unaware of the prior use of this name for a Brazilian species. A new epithet is provided here for the eastern Australian species. While Blake’s original latin description is thorough, the collection of material in spirit now enables details of the pollinarium and its components to be given, as well as slight additions to the general morphological description.

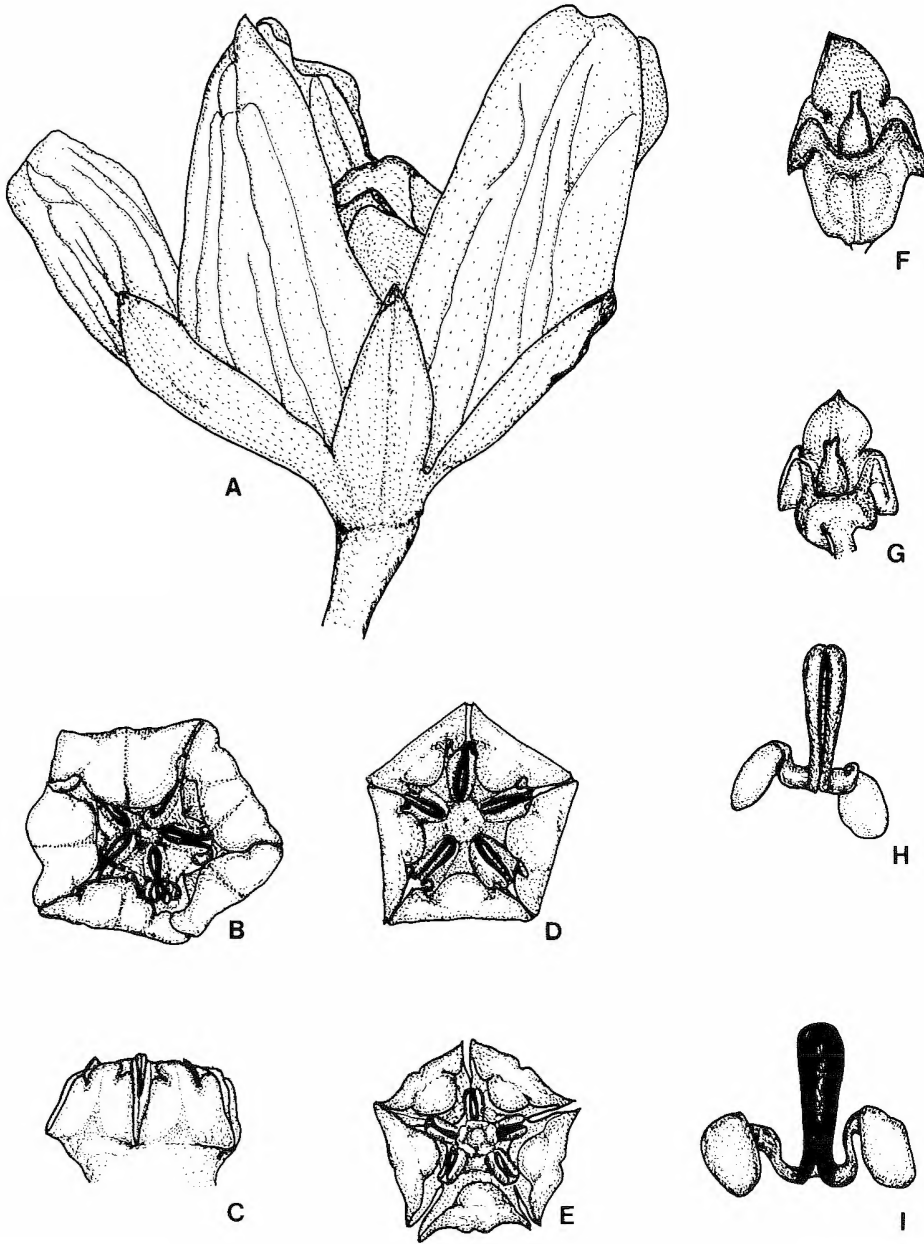


Fig. 2. *Cynanchum brachystelmoides*: A. side view of flower with corona $\times 29$. B. top view of staminal column with corona $\times 29$. C-D. top view of staminal column with corona removed $\times 29$. E. side view of staminal column with corona removed $\times 29$. F-G. abaxial view of corona segment $\times 29$. H-I. pollinaria $\times 200$. A,B,E,F,H Clarkson 4053; C,D,G,I Brass 8396.

Marsdenia lloydii P. Forster **nom. nov.**

Marsdenia suberosa S.T. Blake, Proc. Roy. Soc. Queensland 59: 167–168 (1948), Stanley & Ross, Fl. S.E. Queensland 2: 314 (1986). **Type:** Mt Roberts, McPherson Range, Dec 1946, S.T. Blake 17375 (BRI).

non (Fourn.)Malme, Kongl. Svenska Vetensk. Acad. Handl. 34(7): 94 (1900); Rothe, Bot. Jahrb. Syst. 52: 430 (1915); based on *Verlotia suberosa* Fourn., Fl. bras. 6(4): 324 (1884).

Woody vine. Stems sparsely puberulent, twining, 0.3–1.0 cm thick; with thick layers of fissured, cream, corky bark; with white latex. Leaves oblong to triangular-oblong, 4–11 cm long, 1.5–6 cm wide; apex obtuse-acuminate to abruptly acuminate; base cordate to truncate; glabrous to very sparsely pubescent near base with lateral and reticulate venation more prominent on abaxial surface; lateral veins 5–8; 4–12 extra-floral nectaries present at midrib base of lamina; dark-green above; paler beneath, light-green to whitish-green; petioles 1–2.5 cm long, 1 mm diameter; small vestigial stipules at either side of petiole base. Inflorescence comprising 1–4 fascicles on a rachis up to 1.5 cm long, with up to 4 flowers per fascicle; peduncles 0.1–1 cm long, 0.5 mm diameter. Pedicels filiform, very finely pubescent, 2–9 mm long, 0.5 mm diameter. Calyx lobes suborbicular, very sparsely pubescent on margins, 1.9–2.5 mm long, 2 mm wide, light green. Corolla globose-campanulate, white, 4–5 mm long, 6–6.5 mm diameter; lobes suberect, semi-ovate, reflexed at anthesis, 2–2.5 mm long, 2 mm wide, glabrous externally, internally with dense antrorse white hairs to 1.5 mm long at base continuing into tube; tube densely pubescent inside with antrorse hairs in upper third opposite lobes, 2–2.5 mm long; corolline corona absent. Staminal column 2 mm long, 1.5–2 mm diameter; anther connectives incurved, cream; corona consisting of 5 acute lobes adnate at base of column, 1 mm long, 1 mm wide at base; anther wings 0.5 mm long; anthers 0.75 mm long with acute membranous tip. Ovaries glabrous, cream. Stigma globose, bilobed, not extending above anther membranes, cream. Pollinia ascending, without pellucid margins, oblong compressed, golden, 0.3–0.4 mm long, 0.14–0.17 mm wide. Translators oblong, reddish brown, 0.18–0.2 mm long, 0.08–0.1 mm wide. Caudicles translucent, 0.28–0.37 mm long, 0.09–0.13 mm wide at point of attachment to pollinium. Follicles ovoid, 4–5 cm long. Seeds not seen. **Fig. 3.**

In addition to the twelve collections cited by Blake (1948), the following have been examined.

Queensland. COOK DISTRICT: Tamaree, Aug 1919, *Smith* AQ424923 (BRI). WIDE BAY DISTRICT: Imbil, May 1979, *Rogers* (BRIU5050); Mt. Woowonga, Jul 1983, *Forster* 1602 (BRI); ditto, Nov 1986, *Forster* 2750 (BRI). MORETON DISTRICT: Moss Gardens, The Head, Dec 1984, *Bird* AQ396464 (BRI); ditto, Dec 1986, *Bird* AQ451406 (BRI); Fig Tree Pocket, Oct 1951, *Oakman* AQ216787 (BRI); S.F. Enoggera 309, Nov 1970, *Moriarty* 565 (BRI); near Boombana National Park, Mar 1982, *Forster* 1252 (BRIU); Stable Camp, Yarraman S.F., 26°51'S, 151°56'E, Nov 1987, *Forster* 3199, *Bird & Tucker* (BRI).

Habitat: *M. lloydii* occurs on the margins of complex notophyll vine forest, araucarian microphyll vine forest or in brushbox dominated, open eucalypt forests subject to regular burning.

Conservation Status: This species is widespread along the eastern Australian coast, but relatively rarely collected. Sterile plants are sometimes mistaken for the naturalised *Araujia hortorum* Fourn., from which they may be distinguished by the presence of the corky stem. The species is adequately represented in a number of conservation reserves and should not be considered as endangered or threatened at this stage.

Etymology: Named for Mr Lloyd Bird of Bundamba, in recognition of the significant contribution he has made to our knowledge of rainforest floristics and distribution in south-eastern Queensland, and for assistance given to the senior author with respect to field trips and provision of material.

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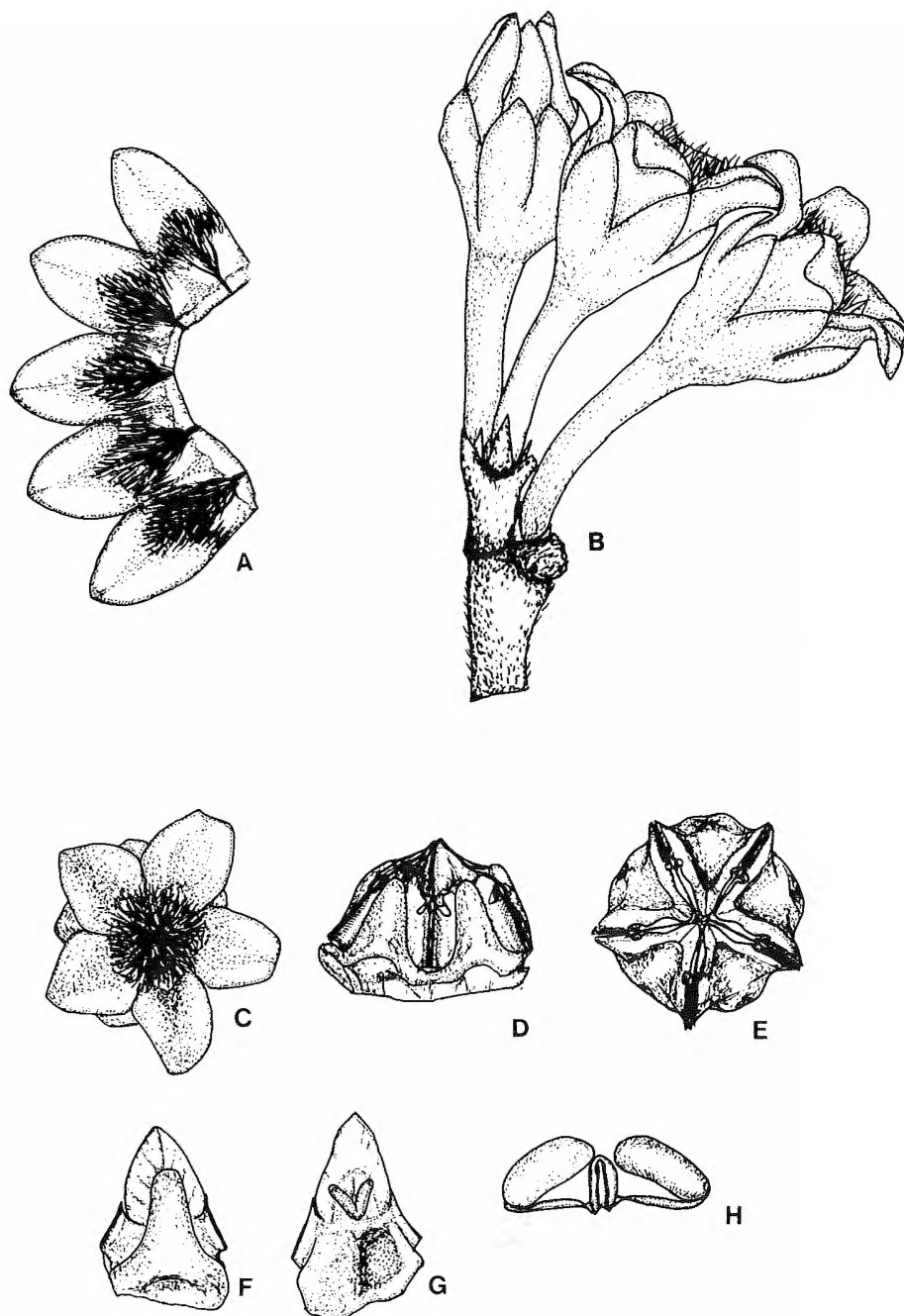
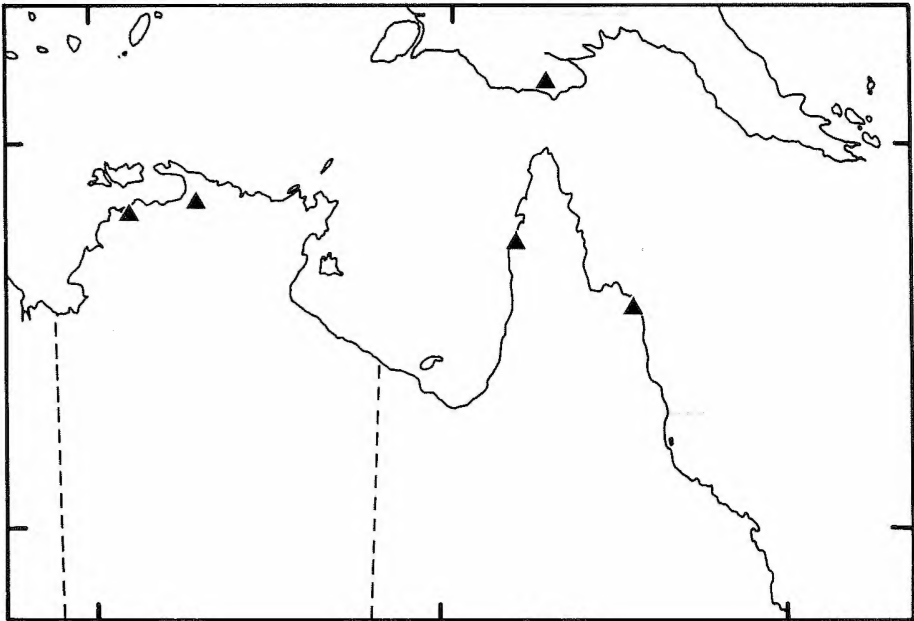


Fig. 3. *Marsdenia lloydii*: A. dissected corolla showing distribution of hairs $\times 5$. B. single fascicle $\times 5$. C. top view of flower $\times 5$. D. side view of staminal column $\times 10$. E. top view of staminal column $\times 10$. F. single anther connective with corona lobe attached $\times 10$. G. single anther connective with corona lobe removed, showing position of pollinia from two adjacent pollinaria $\times 10$. H. pollinarium $\times 35$. A–H Forster 2750.

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Map 1. Distribution of *Cynanchum brachystelmoides*.